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THE IMPACT OF INDCS, NAMAS AND LEDS ON CI-DEV OPERATIONS AND PROGRAMS

Report prepared by Axel Michaelowa, Valentin Friedmann, Stephan Hoch, Matthias Honegger and Frederic Hans (Perspectives Climate Research) under the guidance of a World Bank Ci-Dev team led by Leon Biaou and including Felicity Spors, Harikumar Gadde, Claudia Barrera and Klaus Oppermann

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Executive Summary

After the signing of the Paris Agreement, the policy landscape for the World Bank's Carbon Initiative for Development (Ci-Dev) has changed substantially. Host country governments will no longer look at the generation of revenues from the Clean Development Mechanism alone, but need to assess the requirements of (Intended) Nationally Determined Contributions ((I)NDCs), Nationally Appropriate Mitigation Actions (NAMAs), and Low Emission Development Strategies (LEDSs). Given that host country governments want to access international climate finance and may be interested to mobilize mitigation co-benefits in the areas covered by the Sustainable Development Goals (SDGs) while becoming responsible for mitigation contributions of their own, they will now have to assess the specific requirements from different sources in order to identify the optimal financial support they can secure for achieving their mitigation outcomes. Against this background, the question arises whether Ci-Dev's objectives could potentially be affected by the new policy framework and how it could prevent or at least reduce negative impacts. This is made more complex by the emergence of new market mechanisms under the Paris Agreement's Articles 6.4 (in the following called in this report Sustainable Development Mechanism, SDM) and 6.2 (Cooperative Approaches, CAs) and the uncertainty whether and how the CDM projects could be transitionned into these future mechanisms.

An immediate measure that Ci-Dev has put in place to ensure delivery of emission reduction credits, regardless of the type of market mechanism that survives in the long run, is to ensure that the ownership rights in the Emissions Reductions Purchase Agreements (ERPAs) for all Ci-Dev projects cover both units under the CDM and the relevant new market mechanism that will exist after 2020.

In the short term until 2020, Ci-Dev should – in collaboration with other departments of the World Bank group – promote the benefits of a continued use of market mechanisms. Thereby, the risk of discontinuation of CDM projects due to lack of revenues from buyers other than Ci-Dev could be reduced. Moreover, Ci-Dev should support rulemaking under the UNFCCC that ensures that as many elements of the CDM as possible are taken up in the SDM, and that CDM projects are either directly accepted under the SDM, or be brought into the SDM through a simple procedure. This can take the form of submissions on the design of the SDM.

Ci-Dev should also monitor progress on CAs which could become an alternative route of continuation of crediting of Ci-Dev programs post CDM.

This could be underpinned by Ci-Dev supporting "lighthouse activities", i.e. programs of activity (PoAs) that are particularly beneficial with regards to supporting the SDGs. Moreover, such lighthouse activities could show ways forward regarding upscaling of mitigation – developing PoAs that are linked to the setup of a policy instrument that eventually generates credits and / or that serve as cornerstone of a NAMA.

At the same time as it tries to ensure that the international framework is conducive to continued operation of market mechanisms, Ci-Dev should proactively address those risks that could result in activities delivering less than the contracted CER volumes due to overlaps between mitigation activities included in NDCs and Ci-Dev activities. In other words ensure that if CERs are included in an NDC target they are not also included in the Ci-Dev program, which if it occurred would trigger double counting issues. In order to ensure its activities are always seen as additional, Ci-Dev should engage proactively with host countries regarding the design of NDCs and strategies to attract climate finance.

Due to the status of the World Bank it is unlikely that governments would withdraw approval letters from activities supported directly through the Ci-Dev for other purposes such as securing higher revenues from NAMAs or retaining mitigation outcomes to ensure that their NDC target is reached. However, these issues could become a significant deterrent for private project developers trying to replicate the lessons learnt from the Ci-Dev experience. The degree of ambition required by the Paris Agreement requires the full engagement of a broad range of project developers, and this needs a trustworthy governance environment.

As the risks discussed are not proportional to host country climate policy engagement, we recommend that Ci-Dev particularly engages with governments of countries with active Ci-Dev operational engagement that also have ambitious NDCs and NAMAs and high levels of NDC conditionality on climate finance such as Ethiopia and Rwanda to reduce the potential risks to Ci-Dev. Capacity building that support government officials can help to generate realistic views on the complementarity of climate finance flows. Moreover, Ci-Dev should support work on standardized crediting approaches to facilitate the transition of Ci-Dev projects to the SDM whilst supporting NDC implementation. A “standardized crediting framework”, which would build on several elements of standardization and simplification (standardized baselines, additionality determination at the sectoral level, simplified MRV processes, and a reformed project cycle), could become an effective approach to crediting at a scaled-up level.

Ethiopia, Kenya, Rwanda, Uganda (Catgory A low risk) and also Senegal (Category B middle risk) offer the highest level of opportunities for experimentation with innovative approaches to scaling up of mitigation action toward NAMAs and INDCs and for piloting activities toward the SDM, especially through PoAs serving as key basis for mitigation under a NAMA and. Feasibility studies and pilot activities could be combined with capacity building toward crediting of policy actions. Given that the significant mitigation policy experience in these countries reduces barriers to the actual implementation of Ci-Dev projects, such an engagement is likely to have significant benefits

Overall, Ci-Dev has the opportunity to contribute to the development of new market mechanisms by both showing that project and programmatic activities work on the ground, while supporting a conducive national and international policy framework. Only such an integrated approach will ensure that market mechanisms can play a crucial role in achieving the long-term goal of keeping global warming well below 2°C.

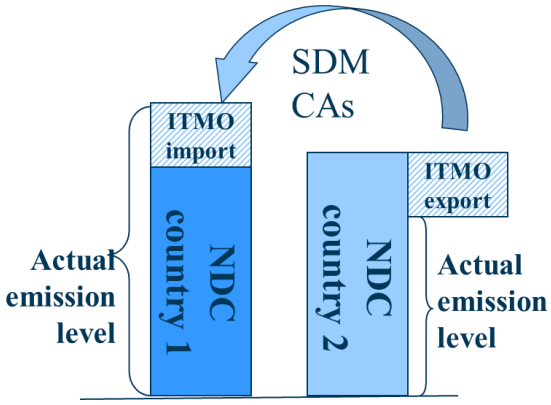
1 Introduction

1.1 Background

In the recent years, the global carbon market in the context of the Kyoto Protocol's Clean Development Mechanism (CDM) has seen difficult times. Prices for CDM credits (CERs) plummeted by 95% between 2011 and 2013, and the market essentially stalled. Only a handful of governments are continuing to buy CERs; total demand between 2015 and 2020 is estimated at around 77 million (UNFCCC 2016c, p. 4-5). However, carbon market infrastructure such as CDM methodologies and governance infrastructure is also being utilized to deliver results-based finance. One of the most notable initiatives in this regard is the World Bank's Carbon Initiative for Development (Ci-Dev).

Recent and future international climate policy developments may influence the operating conditions for Ci-Dev. The Paris Agreement (PA, UNFCCC 2016d) provides a firm basis for the post-2020 global climate regime, under which all countries are expected to contribute to greenhouse gas mitigation. Almost 190 countries have submitted their Intended Nationally Determined Contributions (INDCs) for mitigation and adaptation. As the PA contains a full article on market mechanisms, there is renewed certainty that carbon market mechanisms will remain a key component of the portfolio of instruments to reach the goals of the PA. Art 6.4 PA establishes a centrally governed market mechanism for mitigation. The rules for this mechanism shall be based on the experience with the Kyoto Protocol mechanisms including the CDM. The evolution of Art 6.4 – the Sustainable Development Mechanism (SDM) as it is often called – might therefore be expected to interact closely with the ongoing reform of the CDM. Some might aim to distance the SDM somewhat from the CDM in order to address some of the CDM's shortcomings. Additionally, Art. 6.2 enables countries to engage in a non-centrally governed set of cooperative approaches (CAs) for mitigation. The mechanisms will give rise to Internationally Transferable Mitigation Outcomes (ITMOs). The degree to which international rules will apply to the CAs remains to be seen; we expect this to be clarified by the UNFCCC negotiations before the entry into force of the PA.

Figure 1: Emissions unit transfers under the Paris Agreement



The fundamental difference between the PA and the Kyoto Protocol is that mitigation responsibilities are now defined through a bottom-up instead of a top-down system. Under the evolving PA framework, all parties are free to define their Nationally Determined Contributions (NDCs) according to general principles, and international guidance is then fleshed out on the basis of "broad" consensus. The PA, unlike the Kyoto Protocol, does not make a clear distinction between buyers or sellers of mitigation units, which will affect supply and demand. While developing countries under the CDM had no opportunity costs of selling emissions credits, under the Paris Mechanisms they will need to mobilize other mitigation options to reach their NDC, provided that the NDC goes beyond business as usual. Some observers fear that governments may be reluctant to sell credits at all. Moreover, the PA is broader in scope allowing for different forms of market mechanisms which will compete against each other. In this environment the future role of the CDM and crediting mechanisms in general is unclear.

After the Paris Agreement instruments specified by the Kyoto Protocol need to adapt to the evolving climate framework initially defined by the Paris Agreement. Nationally Appropriate Mitigation Actions (NAMAs) for example are not explicitly mentioned, however the Paris Agreement emphasizes the need for the implementation of national mitigation actions, climate finance, sustainable development and MRV. These are all important elements of NAMAs. High level commitments in NDCs therefore give greater purpose and a sense of urgency to NAMAs. Similarly Low Emissions Development Strategies (LEDS) after the Paris Agreement likely focus on providing support for capacity building and technical assistance to enhance and support the achievement of NDC goals.

The definition of national mitigation targets through the NDCs, Nationally Appropriate Mitigation Actions (NAMAs) and other mitigation policies result in increasing complexity, especially in terms of process and accounting regulations This is likely to affect CDM projects and program (PoA) operations through regulatory changes affecting their business models. Furthermore, climate finance is rapidly evolving and there is great pressure in particular on the Green Climate Fund (GCF) to rapidly disburse its funds of about 10 billion USD and demonstrate concrete outcomes. Some stakeholders have proposed that the GCF should use the existing CDM infrastructure or even acquire already issued certified emission credits (CERs) from the CDM. Given that the current pipeline of Ci-

Dev projects relies on payment at the generation of CERs as the core of its results-based finance approach, how the future development of a reformed CDM or its transitioning to the PA mechanisms will be done is crucial for the overall outcome of Ci-Dev.

We assess the implications of INDCs, NAMAs, Low Emissions Development Strategies (LEDS) and related instruments on Ci-Dev's objectives and present preliminary recommendations for addressing potential risks for Ci-Dev's operations as well as potential opportunities in a policy environment that is rapidly evolving on the international level as well as the host country level.

1.2 Ci-Dev's scope of activities

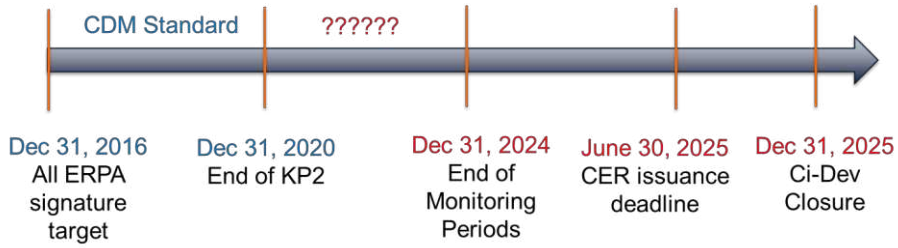
Projects in all African countries that receive International Development Assistance (IDA) as well as those Asian countries classified as Least Developed Countries (LDCs) according to the United Nations (UN) definition are eligible for Ci-Dev support (Ci-Dev 2013). Projects from 39 African countries and 9 Asian countries are thus eligible (see the annexed table for a complete list). A minimum of 75% of all projects within the final portfolio shall be located in LDCs at the time of their selection and around 80% of all projects should be based in Africa.

Ci-Dev projects are to focus on renewable energy and underrepresented sectors and to be innovative and transformational in nature. The former category focuses on projects improving energy access. The latter category can comprise several project types including electrification, improved energy efficiency, and waste management. In general, Ci-Dev aims to support small to medium scale projects and programs that demonstrate how carbon finance can benefit poor or vulnerable communities, deliver development benefits alongside emissions reductions, and result in financial savings or welfare improvements. All projects must become registered CDM activities or result in carbon credits that are recognized by the UNFCCC – potentially including under the Paris Mechanisms.

As of June 2016, Ci-Dev has selected 13 CDM PoAs for technical assistance and CER procurement over parts or their full lifetimes in the areas of energy access to sustainable energy including rural electrification (grid extension, mini-grid, solar lighting and solar home systems), low-carbon cooking and low-carbon water filtration in Sub-Saharan African countries. The Ci-Dev will close on Dec. 31, 2025 (see

Figure 2) and therefore following the Paris Agreement there are concerns about new risks; regarding the use of credits which could be directed towards NDC compliance, and also regarding the status of the CDM as a standard.

Figure 2 Ci-Dev timeline



1.3 New and evolving elements in international climate policy

Most low income country INDCs are explicitly conditional on receiving international climate finance. Efforts by countries to achieve their NDC targets can raise a number of questions regarding their potential interference with other mechanisms and financing instruments in the international climate policy landscape.

The importance of NAMAs established by the Bali Action Plan in 2007 may be strengthened following COP 21 once countries need to take concrete action to achieve their NDCs. A credible role for NAMAs in developing countries will however depend on the availability of international support. NAMAs can represent a bundle of financial and regulatory measures seeking to reduce emissions within one particular sector. They are quite varied in their combinations of measures – even including project-based or programmatic mechanisms. In specific cases, NAMA implementation can have positive or negative implications for the operation of CDM projects due to e.g. regulatory changes endangering renewal for a second crediting period, or overlapping activities between NAMA and existing PoAs resulting in public criticism of double counting of emissions reductions. PoAs and NAMAs in the same activity area can, however, be designed in a way to reinforce synergies. An example of such a combined approach can be found in Rwanda; its health NAMA (see Ngabo et al. 2013), which is being developed jointly between DelAgua and the Rwandan Ministry of Health in form of a public-private partnership, envisages shared responsibilities for roll-out and extensive MRV of water filters and efficient cook stoves on the basis of programmatic CDM activates.

In the 2010 Cancun UNFCCC COP member states were encouraged to establish low emission development strategies (LEDS) – a concept that can be seen as purposefully vague and which never really took a concrete shape neither in later negotiations nor through commonly accepted guidance. As such, LEDS can be viewed as broader and more comprehensive strategies and policies that define a long-term trajectory, explicitly referring to issues directly relevant to climate change mitigation but not in and of themselves representing regulatory changes.

Similarly, sustainable development priorities can in most countries only be explicitly identified in the approval criteria of the Designated National Authority (DNA) for CDM project proposals. Where Parties have chosen to apply clear and transparent criteria, the criteria can serve as indication of these sustainable development priorities. Changes in these priorities do, however, in principle not affect ongoing CDM activities and as such are not of great relevance to Ci-Dev operations.

1.4 Objectives

We assess whether observed and expected developments in Ci-Dev eligible host countries and at the level of international climate policy can have impacts on CER accrual to Ci-Dev or whether other risks and opportunities could arise from the Paris Agreement. These questions are addressed both through a general discussion of international climate policy developments and their implications on the objectives of Ci-Dev as well as an evaluation of the 48 eligible countries with regard to the key questions outlined in box 1.

Box 1: The three key questions of the country evaluation

1) Is there a real risk that host countries prevent project owners from selling CERs to Ci-Dev because the host country governments want to use these CERs for compliance with their NDC, effectively expropriating project owners and leading to lower CER availability for the Ci-Dev CER pipeline than expected?

2) Is there a real risk that the CDM falls into obsolescence (i.e. the institutional and administrative infrastructure for processing the CDM no longer operates) before the end of the Ci-Dev purchasing program in 2024 as a result of:

i) a lack of market activity resulting in the stop of CER generation and issuances within the Ci-Dev purchasing period of June 30, 2025 (See Figure 2)? Or

ii) countries utilising other market mechanisms rather than the CDM within the Ci-Dev purchasing period (i.e. up to June 30, 2025 (see Figure 2)?

3) Is there a risk that the environmental integrity of CDM projects could be threatened by:

i) development of new national policies e.g. renewable energy targets, energy efficiency targets etc. that could lead to the CDM projects being seen as business as usual by media and the general public? Or

ii) concerns that CERs cannot be properly accounted for resulting in an increased risk of double claiming (see textbox 2) because a host country lists the emission reductions in the reports on progress regarding its NDC?

In chapters 2-7 below, we present currently evolving climate policy developments and their respective risks and opportunities for Ci-Dev operations and objectives. Chapter 8 analyses risks and opportunities at the country level through a systematic literature study of INDCs, NAMAs, LEDS and related documents. Finally, chapter 9 offers conclusions and a number of specific recommendations for Ci-Dev operations and further research needs.

2 The political economy of (I)NDCs and the consequences for Ci-Dev

2.1 Best case: a consistent hierarchy where ambition matches policy plans

The report assesses LEDS, the (I)NDC and the NAMAs since they all serve mitigation goals and in the best case, work within countries at different hierarchical levels and combine as mutually supporting and complimentary tools to facilitate national mitigation efforts: LEDS represent a long-term policy vision over a long time horizon, (I)NDCs provide the quantified emissions reductions objectives while NAMAs represent the sector-specific actions, which can attract international support to produce measurable mitigation outcomes achieved by appropriate financial or regulatory policy instruments. In the ideal case the ambition, which is often expressed by a mitigation scenario below the specified business as usual scenario, matches realistic mitigation potentials of planned policies.

2.2 Baseline and mitigation scenarios without robust foundation

Many INDCs (see Annex) are based on scenarios that were either not constructed with a real assessment of mitigation potentials, where the assessment did either not consider NAMAs properly (possible overlaps) or there are no NAMAs being developed at all. There may also be cases, in which the NDC overestimates mitigation potentials. Finally there are cases, where the (I)NDCs were designed with low stringency.

2.3 Inconsistent patchwork of policies

The reality in most countries is that LEDs, INDCs and NAMAs rarely are mutually supportive, due to disconnected implementation and differences in fundamental assumptions e.g. regarding the approaches applied to determine baseline scenarios. Furthermore some difficulties arise from the fact that these instruments are often defined over different time horizons and some countries' INDCs do not even acknowledge the role of NAMAs. These inconsistencies are primarily due to the fact that there is no common basis for accounting for NAMAs within national INDCs which are often developed by different government agencies and external consultants each with very limited resources and opportunities for vertical and horizontal integration. Besides limited time and financial resources, institutional structures can prevent the necessary consultative processes from taking place. As indicated in our subsequent country-level assessment, the level of coordination between climate policy instruments varies significantly.

2.4 Activity overlaps and double counting

A major concern in this context is that overlapping activities result in either a late realization that mitigation pledges were overambitious or that the same emissions reductions are continuously

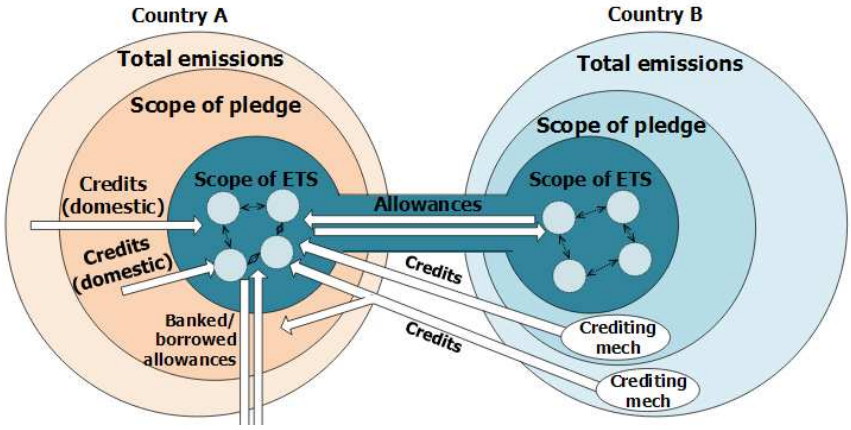
claimed twice or double counted and thus can result in a bad reputation due to low environmental integrity (see Box 2).

Box 2: Double counting

Schneider et al. (2015) differentiate three principal forms of double counting: double issuance – the issuance of two units for the same reductions, double use –either by the same country or by two different countries - and double claiming of reductions – the accounting of the same reductions both in a greenhouse gas inventory and in units towards attaining an external mitigation pledge or counting the same reductions toward two different sectoral NAMAs. The latter concept was brought into the UNFCCC negotiations by Prag et al. (2013). For achieving environmental integrity all forms of double counting need to be eliminated.

Hood (2015) stresses the greater variety of flows of units under the PA that makes it more difficult to prevent double counting compared to the Kyoto Protocol.

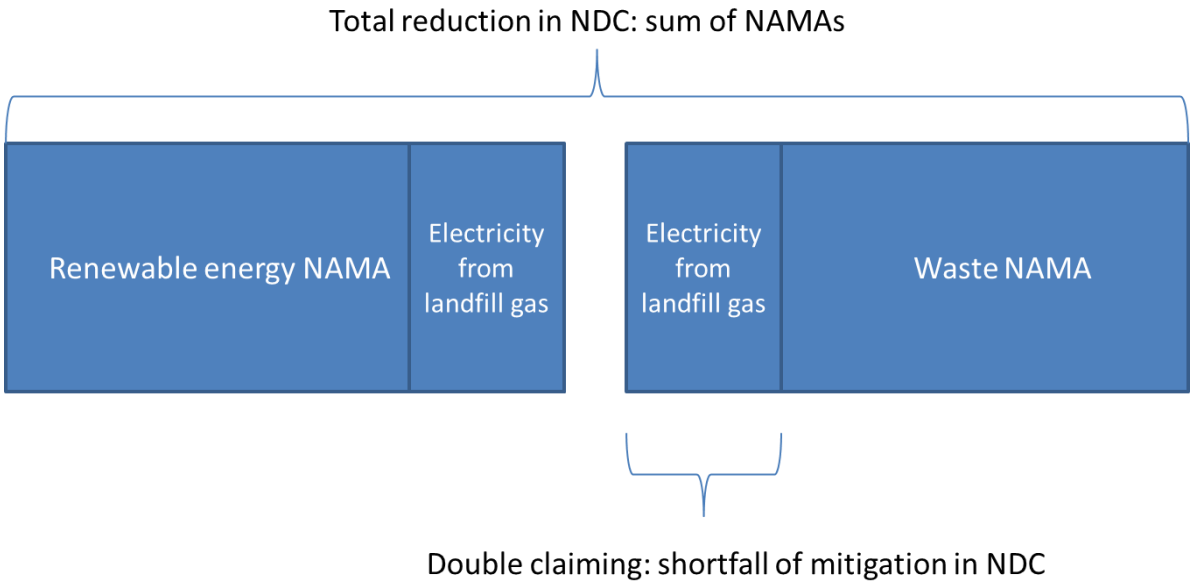
Figure 3: Different types of units created under the Paris Agreement



Source: Hood (2015)

Similarly, design of policy instruments in the context of NAMAs often insufficiently addresses interferences between sectors. Figure 4 shows an overlap of mitigation activities between two NAMAs with the activity *electricity co-generation from landfill gas capture* as NAMA in the renewable energy and another NAMA in the waste sector. Without corrections for such overlaps, governments may incorrectly calculate their mitigation achievements towards an INDC by simply adding up all the mitigation reported by the NAMAs.

Figure 4: Double counting in NAMAs leading to mitigation shortfall in NDCs.



3 From the CDM to the Paris Mechanisms: Risks and Opportunities

The greatest macro-trend of relevance to Ci-Dev is the fragmentation of market mechanisms. Although with the introduction of a centrally governed mechanism, the PA provides the basis to develop a successor to the CDM and a broader set of bilateral mechanisms under the umbrella term CAs, the uncertainty is now no longer whether market instruments will be part of the post-2020 regime, but whether there will be a critical mass of countries which participate in the SDM to generate sufficient supply and demand for emission reductions. Will there be a constructive linking between the CDM and SDM, which could facilitate the transition of the institutional structure of the CDM to the SDM? Will policies in the future build on CDM type of activities? Will there be a strengthened role for Sustainable Development under the SDM? And finally, could emissions reductions units from the CDM be eligible under the SDM?

3.1 From Kyoto to Paris: Learning from the CDM?

Explicit reference to “apply experience from Kyoto Mechanisms” (UNFCCC 2016d, para 37f Paris Decision, PD) indicates that there is broad agreement among Parties to build on the successful reform of the CDM. All the key elements of the SDM defined in Art. 6 would allow taking over of key procedural and institutional structure elements of the CDM:

- supervised by a body designated by the CMA (Art. 6.4)

- payment of adaptation tax (Art. 6.6)
- authorization of public and private entities by Party (Art. 6.4b)
- accounting for credit transfer in buyer and seller countries to prevent double counting (Art. 6.4c, 6.5)

And the rules, which are to be developed by CMA, shall according to para 37 PD (UNFCCC 2016d) be based on principles that are also highly compatible with the principles underlying the CDM:

- Real, measurable and long term mitigation (para 37b PD)
- Specific definition of scopes of activities (para 37c PD)
- Additionality (para 37d PD)
- Verification and certification by DOEs (para37e PD)

All of this indicates that there is broad agreement among Parties to build on key principles of the CDM including notably elements of standardization and the programmatic approach, on which Ci-Dev was established. How far the actual mechanism survives remains to be seen given unease of various parties, not least the EU regarding its performance and role in the future. Therefore, a critical question for Ci-Dev regards the future of the CDM pipeline, and post-2020 eligibility of CERs.

3.2 Scenarios of transition from the CDM to the SDM

The transition from the CDM to SDM could result in one or a nuanced combination of the following stylized scenarios depending on the SDM's scope, i.e. whether it includes activities at project-, program- or sectoral level:

1. Full acceptance of CDM projects and direct use of the CDM modalities and procedures under the SDM. For example, the CDM Executive Board would become the SDM EB, CDM DOEs would automatically become SDM DOEs, CDM methodologies for baselines and monitoring become SDM methodologies and so forth. These rules would then be complemented by modalities and procedures for crediting of mitigation policy instruments and sectoral mitigation. CERs would continue to be issued after 2020. The likelihood of a direct acceptance of the CDM under the SDM – as well as CER demand – would increase if the ongoing CDM reform continues to progress and expands the scope of PoAs and enhances standardization and simplification including of baselines, automatic additionality determination, and MRV: This might alleviate the widely held perception that the CDM is regionally and sectorally biased, inefficient and expensive, and its procedures are difficult to scale up.
2. Selective use of CDM modalities and procedures under the SDM, which is managed by new institutions. CDM projects can apply for recognition under the SDM, and then issue SDM units after 2020.
    a. CERs issued before 2020 can also be converted into SDM units
    b. Post-2020 CERs cannot be converted into SDM units (only full-on SDM projects generate SDM units post-2020).

3. No use of the CDM after 2020. There is no possibility to have CDM projects generate credits under the SDM after 2020, as institutions and rules of the SDM would be completely distinct. In such a scenario, CDM institutions would have to make the case for the CDM to be accepted by some countries as Cooperative Approach (CA, such CAs would then be accepting CDM credits: Climate finance institutions buying of CERs would probably run out due to the lacking perspective of the CDM.
4. CDM continues in parallel to SDM post 2020. The CDM continues as a separate mechanism under the umbrella of Art. 6 due to a wide interpretation of this Article. There will be a division of labor between the CDM and the SDM that could take two forms:

- the former concentrates on crediting of projects and PoAs while the SDM focuses on crediting of policies.

– the former can be accessed by a certain group of countries, e.g. LDCs, while the SDM is accessible to middle income counties and emerging economies.

3.3 Building on Programs of Activities for design of NAMAs and scaled-up crediting under the SDM

The interaction between national mitigation policies i.e. NAMAs and CDM activities or PoAs generates challenges, but it has enormous potential to advance scaled-up mitigation action if implemented correctly. Robust design of hybrid PoA and/or NAMA structures requires careful consideration of a number of accounting, MRV and institutional aspects and the experience in such approaches is limited (Michaelowa et al. 2015). A “standardized crediting framework”, which would build on several elements of standardization and simplification (standardized baselines, additionality determination at the sectoral level, simplified MRV processes, and a reformed project cycle), could become an effective approach to crediting at a scaled-up level. This would in particular be helpful for activities that are geographically dispersed or which require a certain scale for economic viability as is the case for rural electrification. MRV and the CDM project cycle are areas where further standardization seems possible. Currently progress has been made in standardizing baselines and additionality. To demonstrate the feasibility of further standardization, the World Bank considers identifying a pilot activity from the Ci-Dev activities in which all elements of a “standardized crediting framework” covering the baseline, additionality, MRV and the project cycle would be applied in parallel to the regular CDM standards and procedures

Ci-Dev has actively contributed to exploring sustainable business models to support effective crediting for energy access projects. These experiences are highly relevant exploring possible pathways for transitioning from the CDM to the SDM.

4 Critical design elements of the SDM beyond the CDM

Compared to the Kyoto mechanisms there are two aspects in which the SDM could be different: the SDM could address SD in a more centralized manner and according to the Paris Agreement has to contribute to global emissions reductions.

4.1 Sustainable Development in the SDM: growing but yet uncertain relevance

From a climate policy standpoint previously considered an "outside-topic", sustainable development has become a more important factor in the climate policy landscape: in 2015, the Sustainable Development Goals (SDGs) were internationally agreed (UN General Assembly 2015) and while their role for the UNFCCC regime remains unclear, it can be expected that the SDGs will assume an increasingly prominent role in measuring development and quite possibly also climate finance results. On the domestic level, preferences for sustainable development are often expressed at various levels of detail and often without real coherence between various policy documents such as the NAMAs, INDCs or national energy- or climate strategies etc. In view of this growing importance, CDM host countries – including those eligible for Ci-Dev support – could in principle require more stringent demonstrations of how activities contribute to their SD as a precondition for renewal of activities for a second crediting period. While this would incur some additional transaction costs, Ci-Dev project activities are without exception extremely likely to comply with SD criteria due to the substantial social, environmental and economic benefits that these activity types generate. We therefore do not view SD criteria and indicators to become a problematic policy element for Ci-Dev operations. If their relevance in operationalizing the SDM is greatly enhanced compared to past experience with the CDM (e.g. SD criteria figuring as strong prerequisites to participate in the mechanism), it is possible that the SDM would remain a very limited source of credits due to the additional challenges for project developers. Even if this was the case, ongoing CDM projects – and the standing of the Ci-Dev program – would in all likelihood gain rather than lose – as the host countries would benefit from exploiting the freedom of choice associated with the CDM's lack of mandatory SD criteria.

4.2 Overall mitigation in global emissions

Article 6.4d PA asks that the mechanism is "to deliver an overall mitigation in global emissions". This clause can be interpreted in various ways.

For ambitious NDCs and provided that the market mechanism is based on realistic baselines, the mechanism delivers an overall mitigation in global emissions as it facilitates the achievement of the ambitious NDCs. In that context, no further specific rules for the mechanism would be required to achieve global mitigation, and no transaction costs or distortions would accrue.

In the case where at least some of the NDCs are not sufficiently ambitious, there is a risk that the market mechanism leads to a cheap surplus of mitigation that could depress the price in the carbon market to a point where it can no longer incentivise mitigation action. In this way less ambitious NDCs

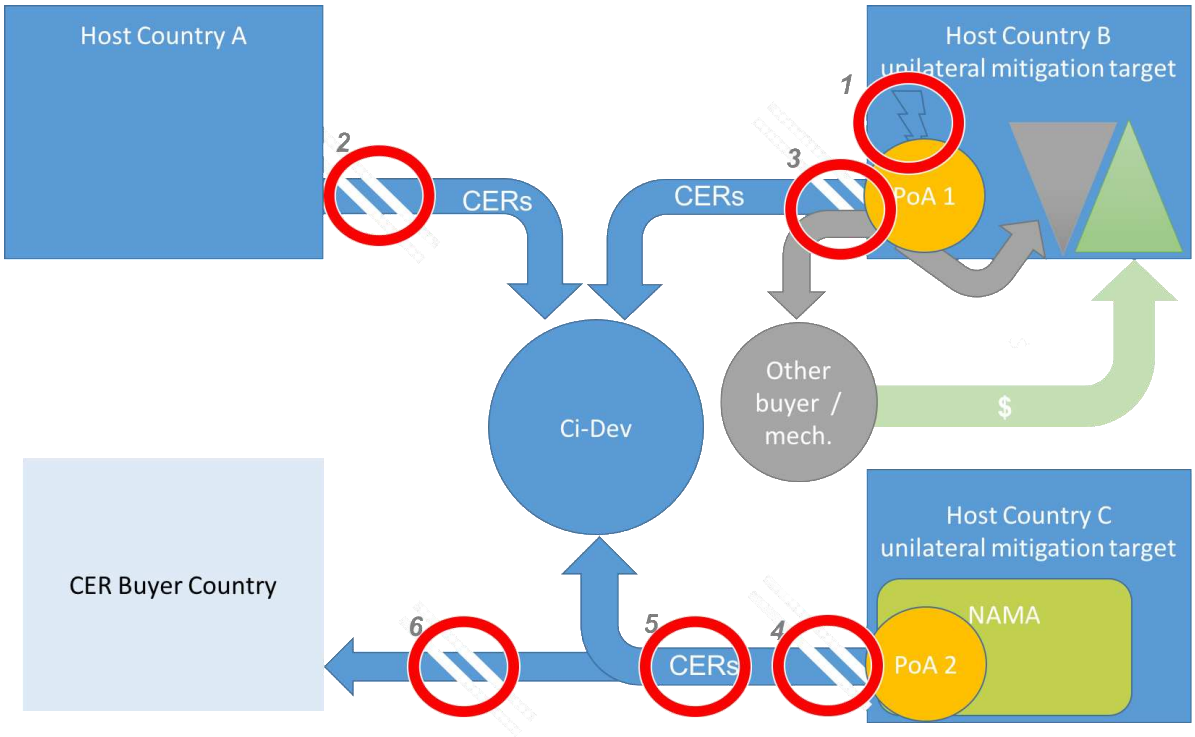
can negatively impact ambitious NDCs. To prevent this and to ensure that the mechanism delivers an overall mitigation, various options have been proposed. All of them will increase the transaction cost of the mechanism and crowd out efficient mitigation; some will also lead to distortions in the choice of mitigation options. The simplest option would be to voluntarily cancel units instead of using them for compliance with NDCs. Discounting of credits by a certain percentage would at least not lead to distortions between different mitigation options and be transparent. The discounting should occur at the point of accounting for traded credits. Introducing indirect discounting within methodologies (i.e. at the production side of credits), e.g. through overly stringent baselines for calculation of mitigation achieved by the mechanism would lead to differentiated impacts depending on the mitigation technology and decrease efficiency significantly in some cases to the point of making crediting instruments unviable.

Any approaches to introduce discounting or make baselines more conservative than under the current CDM would impact Ci-Dev operations when crediting periods are up for renewal by decreasing CER volumes.

5 Potential climate policy risks for Ci-Dev activities

In the following we specify the possible reasons for each of the three key risks listed in section 1.2 on Ci-Dev operations identified above. Figure 5 illustrates the three principal risks to Ci-Dev operations with regard to continued CER accrual.

Figure 5: Policy level risks to CER generation for Ci-Dev



Circle 1 represents the risk that occurs if a host country's DNA rejects the PoA or does not undertake any efforts to maintain a regulatory environment conducive to a PoA's continued operation, e.g. collection of data required to apply the selected baseline and monitoring methodology, because it no longer thinks that the CDM has a future. Circle 2 relates to the risk that due to discontinuation of the Executive Board or the CDM registry administrator**,** no CERs can be issued any more. Circle 3 means that the host country withdraws the approval letter because it decides to sell credits under a more attractive mechanism, or because it needs the credits to fulfil its NDC. Circle 4 represents a non-registered CDM project because it is no longer deemed additional after the introduction of a NAMA or it is not able to qualify for a new crediting period. Circle 5 represents the risk of loss of credibility and environmental integrity of CERs due to either perceived double claiming of mitigation by the CDM activity and the host country or due to perverse incentives resulting from additional financial incentives or regulations implemented via a NAMA. Circle 6 represents the risk that the CDM project is unable to sell CERs to other buyers apart from Ci-Dev and the revenues received from Ci-Dev are insufficient for the developer to continue its operation.

5.1 Temporal aspects of risks

On a fundamental level one can distinguish pre-2020 risks from post-2020. Risks regarding double claiming under an NDC only become relevant after 2020 unless there is an "early action" provision in the NDC. Given that the second commitment period of the Kyoto Protocol provides for a clear legal situation with regard to the CDM, the risk that the CDM stops to exist before 2020 is virtually zero. If scenario 3 materializes and the CDM ceases to exist post-2020, or CERs cannot be converted into

the credits under the SDM due to formal regulations, Ci-Dev would depend on the emergence of new SDM projects or a transition of former CDM activities into the SDM for acquisition of credits in 2020-2024. Under scenario 1 where emissions reductions units from ongoing CDM activities are directly accepted in the SDM after the 2020 milestone, Ci-Dev could essentially continue buying units from the same activities. Under Article 6.2, alternative mechanisms with higher prices could already become relevant before 2020 if there is no vintage limit on pre-2020 units. Mechanisms such as the Japanese Joint Crediting Mechanism (JCM)[1] could be such an example.

Future demand for CERs will affect viability of PoAs. It is possible that demand further declines, which could put the financial viability of activities supported by Ci-Dev at risk and potentially force Ci-Dev to purchase a larger share of CERs from such activities to prevent their termination.

There is also a fundamental risk regarding the post-2020 world, which concerns the very core of Ci-Dev's objective to enable carbon markets: if elaborating the accounting rules for new market instruments does not progress until 2020, international market mechanisms in general could suffer from insufficient clarity on how to use markets to contribute to NDCs. A trigger for such a development could be a failure to agree on the interpretation on how to achieve the "overall mitigation of global emissions" under the SDM specified in Art 6.4.d. Also if key countries are seen as not fully supporting implementation of the PA, demand for credits from market mechanisms would evaporate and credit price remain close to zero. Currently, the strong show of high-level support as observed e.g. by 175 Parties signing the Agreement on the first day of the signature period attenuates this risk. In addition, the prominent positioning of market instruments in Article 6 and the high ambition along with the transparency framework of the PA are further indications that this risk is low. Supporting an "early start" phase of the SDM utilising existing activities, such as those under Ci-Dev could help define best practice and improve the chances for a significant role of the SDM as an instrument for implementing the PA.

We will now discuss the three key risks in detail.

5.2 Political risks for CER accrual

While we note that this risk is limited and very unlikely to occur, there are two possible reasons why a host country might no longer want CERs to be allocated to CDM projects (see circle 3 in

[1] The JCM is a bilateral crediting mechanism between Japan and selected – currently 16 – developing countries for promoting mitigation (see Dransfeld et al. 2015a, b).

Figure 5) that include

a) Counting the mitigation toward its own NDC (post-2020)[2], or
b) Achieving a higher revenue from selling mitigation units outside the CDM (both pre- and post-2020).

The driver for counting reductions towards an NDC might develop once NDCs become binding in the post-2020 regime. Countries which have defined highly ambitious NDCs (see Annex) could potentially come under pressure from domestic interest groups that are affected by mitigation policies to count all mitigation achieved in the country towards its own NDC and thus alleviate pressure for further measures for cutting emissions. If the NDC contains elements that are conditional to receipt of international climate finance (which is the case in almost all Ci-Dev countries), the government could argue that revenues from CER sale are climate finance, especially if no international climate finance is allocated to the country. Therefore, it would feel entitled to expropriate project owners and incorporate the corresponding revenues for implementing its NDC. This risk is amplified for public sector owned Ci-Dev activities, as the government directly receives CERs, and therefore would not need to negotiate with private sector project developers in case it decides to use CERs for NDC achievement. This situation theoretically applies to several Ci-Dev activities e.g. the energy access PoAs in Ethiopia. The situation could look as follows: the ambitious Ethiopian NDC is contingent on receiving a significant amount of international climate finance. The government of Ethiopia has set up a dedicated institution – the CRGE Facility – to administer incoming climate finance, and is developing a full suite of proposals for the GCF. Assuming that these proposals are rejected, the government would now come under pressure to fill the CRGE Facility through other means. It could declare that the revenues from sale of Ci-Dev PoAs should anyway have been unconditional grants to Ethiopia and thus the CERs become state property.

[2] If the recipient country cancels the CER there is no risk

However, given that Ci-Dev primarily operates in low-income countries, some of which have not even determined quantified mitigation targets and all of which are unlikely to be heavily pressured in case of underperformance, the risk that Ci-Dev host countries resort to withdrawing approval letters in order to achieve their NDCs in the absence of international climate finance seems highly improbable. It is probably more likely that countries would fail to fulfil their NDC and argue this is due to a lack of support. Such a claim would not impact Ci-Dev activities directly but of course the perceived quality of the credits would suffer from the default on the NDC.

The risk of the host government using the mitigation achieved by Ci-Dev projects towards its own NDC is very limited given countries' relationships with the World Bank Group and governments who are the Ci-Dev financiers. The risk of a project owner selling to a different buyer other than Ci-Dev in order to achieve higher prices despite existing purchase agreements depends on the price differential and to which extent the rule of law would prevent breaking contractual agreements; again it is unlikely if the seller wants to remain in international business. These risks might however be significant for non-Ci-Dev buyers of CERs which lack the same standing in the host country as the World Bank. However, this risk only occurs in countries that do not honour private property rights (see risk of doing business ranking included in the Annex).

The key question is then at what level of political pressure regarding NDC implementation governments would actually start to expropriate CER from buyers other than the World Bank. This question, which goes beyond the scope of our assessment, could be evaluated in greater depth in a dedicated study.

5.3 Project operation disruption due to CDM obsolescence or low CDM attractiveness compared to alternative mechanisms

A second risk is that the CDM as a tool for evaluating mitigation outcomes internationally and nationally becomes obsolete as host countries are busy embracing new opportunities in the climate finance (e.g. applications for support by the GCF) and carbon market areas or the activities no longer comply with new eligibility requirements (e.g. the SDM in case of scenario 3 – if it is not compatible with CDM activities). As a consequence, regulatory bodies for CDM projects or PoAs could simply discontinue and CER issuance could be stopped post-2020. Governments might also revoke letters of approval (see circle 1 and 2 in

Figure 5). This could result in a deterioration of CDM activities in one country or even spill over into other countries in the region – especially in the case of multi-country PoAs. Whilst this risk is conceivable both in a pre and a post-2020 world and largely a function of a country's general capacity and willingness to take coordinated action for climate mitigation as expressed by our evaluation of countries in three categories (see Annex), it is limited since such a collapse would undermine investors' confidence in the international regulatory regime. If this risk was to materialize it is only envisaged in countries that are characterized by limited human capacity in government institutions, bad governance and a low degree of trust. Also countries undergoing a dramatic shift in government might be prone to that risk, because the new government wants to distance itself from activities undertaken by the previous government.

Before 2020 all Ci-Dev emissions reductions are CERs under the CDM. After December 31, 2020, Ci-Dev will purchase and renegotiate emissions reductions units under a standard comparable to the CDM agreed upon by Parties or between Ci-Dev and the program entities. Such a renegotiation would require consideration of eligibility for a new non-CDM standard that may be required for the post-2020 volumes, and further sovereign approval (such as LOAs in the CDM). At the same time it would allow to take up analogue commitments with the same stakeholders if their respective activities could produce SDM units post-2020.

If a host country sees the CDM as losing relevance or being subject to continuous market uncertainty, it might dismantle regulatory capacities or realign them towards domestic policy action (e.g. NAMAs) and the implementation of NDC targets or the wish to focus on attracting climate finance from large funding sources such as the GCF. This risk is real, and to some degree already occurring. On the other hand, there are also opportunities associated with integrating programmatic activities with NAMAs if such hybrid approaches are designed carefully.

5.4 Reputational and environmental integrity risk

Broadly speaking, trust, reputation and environmental integrity of market instruments are interrelated issues and currently an important challenge. This challenge directly relates to the implicit objective of Ci-Dev to reliably reduce emissions through high-quality projects. Public perception plays an

important role: Environmental integrity could suffer as a result of inadequate efforts to prevent double counting (see circle 5 in

Figure 5). Double counting can take various forms[3], including double counting in a narrower sense of actually simply counting the same CER twice, but also varieties such as double claiming of emissions reductions on both the policy-level (i.e. NAMAs and NDCs) and level of Ci-Dev projects, or on the level of Ci-Dev projects and that of other carbon market mechanisms (bilateral instruments such as the Japanese Joint Crediting Mechanism (JCM). Perverse incentives could potentially result from financial support through policy instruments other than the CDM being offered to project developers or project operators potentially creating a public image that no additional emissions reductions are taking place. This public perception issue is however attenuated by the visibility of co-benefits resulting from activities supported by Ci-Dev and we do not expect perverse incentives to become an issue in this context.

Once former Non-Annex-1 countries are bound to mitigation commitments in their NDC post-2020, countries might fail to prevent double claiming of emissions reductions if they have not properly implemented registries to account for the corresponding emissions credits. In such an instance, emissions reductions could be issued for the Ci-Dev project while still being counted by the host country towards its NDC. A more severe form of double claiming would occur if Ci-Dev projects would

[3] We apply the same definitions for the various forms of “double counting” as Schneider et al. (2015) – see textbox 2.

also be registered under a bilateral market mechanism such as the JCM. While there currently is no overlap in JCM activities with Ci-Dev and it does not seem likely that the specific activity types supported by Ci-Dev could also be funded by the JCM, and by other such bilateral mechanisms if they emerge. It is therefore important to monitor such developments and work to avoid double claiming as any such overlap could do damage to the reputation of the Ci-Dev program.

Additionally, an image risk could emerge outside of influence of Ci-Dev potentially already before 2020, if public attention is drawn toward emerging instruments with potentially uncertain environmental integrity under the CAs and the reputational damage spills over to market instruments in general. Buyer countries might as a consequence back away from both the CDM and the SDM. Finally, it is also in principle possible that the SDM does not evolve into a credible mechanism and that provisions on accounting at the UNFCCC level are not sufficiently stringent, leading to double counting of emissions reductions in host countries, which have unconditional mitigation targets.

6 Potential climate policy opportunities for Ci-Dev activities pre 2020

While generating risks, international climate policy developments can also present opportunities for Ci-Dev activities. We first look at the short term until 2020.

6.1 Hybrid PoA-NAMA structures

While some pilot activities have attempted combined approaches (Ngabo et al. 2013), to utilise the PoA to provide incentives for scaling up mitigation within the enabling environment of a dedicated policy framework, this is yet largely untested territory (Michaelowa et al. 2013). the potential for this model to be scaled up to meet NAMA objectives could be enhanced by international support through pioneering institutions in partnership with governments and private sector participations, and could also potentially include Ci-Dev.

6.2 Blending of climate finance with market mechanisms

While in the past, there was an “iron curtain” between the CDM and the Global Environment Facility, blending of climate finance with market mechanism revenues is becoming increasingly accepted. There are numerous opportunities for such blending, particularly with regard to overcoming investment barriers due to a lack of experience with the currently evolving new market instruments. Units under a pilot-phase SDM could potentially already be used by climate finance institutions pre-2020, which would help prevent that these institutions “reinvent the wheel” for results-based finance.

However, the GCF’s is expected to take the issue of environmental integrity seriously and therefore will be unlikely to apply anything but robust baseline and monitoring methodologies in a manner that is comparable across projects. Given challenges in upscaling its project pipeline, by acquiring and

retiring CDM – and later SDM - credits the GCF could rapidly demonstrate mitigation results in an internationally recognized manner. In this sense, climate finance could act as bridge to support market mechanisms based mitigation activities and address investment barriers that are preventing projects occurring in underrepresented countries, in a period in which demand from compliance with mitigation targets is lagging – until new demand resulting from increased ambition resulting from NDCs can drive prices higher.

Demand for credits from Ci-Dev projects would increase the likelihood that these projects perform.

6.3 New sources of demand for CERs

New uses of the CDM that could lead to additional demand (UNFCCC 2016c), coming from domestic carbon pricing schemes in developing countries, but also from new sectors such as aviation: While for aviation it is unclear what quality criteria would be applied, demand could be as large as 40% of available CERs in 2020-2030 (970 million CERs) as estimated by Thompson Reuters analysists (Garside 2016). Domestic developing country policy instruments that could potentially generate demand to keep credits in the country will most likely only concern more advanced developing countries and are thus not relevant for Ci-Dev. As mentioned, there are several approaches to embed CDM activities in NAMAs and thus also in NDCs (Michaelowa et al. 2015). In view of the need for best-practice examples how the SDM or CAs could be operationalized, early action pre-2020 potentially with banking of credits will increasingly become important. Here the countries that declared the support for market mechanisms in Paris – the EU but also Canada, New Zealand Norway, Switzerland, and the US are critical in providing resources for such pilot schemes.

7 Opportunities post-2020

Post-2020 a whole new situation regarding supply and demand is to be expected. Demand for credits from those NDCs that are ambitious could be substantial, but potential buyer countries (primarily developed countries) have so far not publicly clarified what types of international emissions credits would be eligible toward their NDC nor are their NDCs sufficiently ambitious – both compared to the global ambition level – resulting in approximately 2.7°C by 2100 (UNFCCC 2015) and their domestic mitigation potentials as estimated by most observers. The ambition of the PA enshrined in its long-term goal and the inclusion of a review mechanism could over time result in improved ambition in NDCs of buyer countries. Greater ambition could be supported if emissions reductions from the SDM are cheaper than further reductions domestically and are not perceived as having environmental integrity issues. Ci-Dev could in this context demonstrate best practice in developing sustainable business models for scaled up activities with high development benefits and such development would fully align with the objective of Ci-Dev to act as a market enabler.

At the same time the situation regarding supply is also expected to change: Differentiation could reduce supply as fewer countries and sectors are eligible to export units with demand for emissions reductions domestically in developing countries, especially emerging economies, growing due to the

new obligations. Ongoing Ci-Dev activities could demonstrate to international donors how results-based mitigation can work effectively.

Many stakeholders expect crediting of policies and NAMAs post-2020 as illustrated by the growing number of publications on this (Wooders et al. 2016). Ci-Dev could be playing a pioneering role in developing appropriate methodologies that contribute to a high environmental integrity of the SDM and other scaled-up mechanisms.

8 Analysis of risks and opportunities at country level

We have analysed the INDCs of all 48 Ci-Dev eligible host countries bearing in mind the potential risks that could arise for Ci-Dev operations discussed in section 5. For this purpose, we have chosen a number of categories (mitigation ambition, baseline transparency, and baseline stringency, commitment of government, stakeholder consultation, governance, and PoA participation) and rated each country according to comparable metrics for each category (see Table 1). We have used these metrics in combination in order to assess respective risks for each of the three main country-level risks identified toward Ci-Dev operations. Besides these categories of analysis based on a content analysis of countries' official climate policy communications we have categorized countries according to the overall sophistication of their climate policy ensemble.

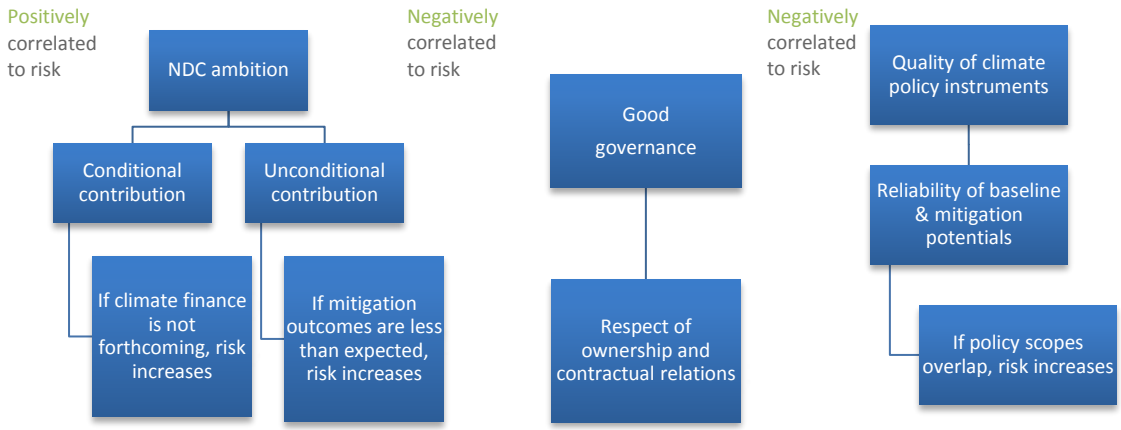
Table 1: Approach for ratings within each category (sources and results are detailed in Annex)

Definitions	LOW	MEDIUM	HIGH
Emission reduction target in INDC	Less than 15% reduction from baseline	15-40% reduction from baseline	>40% reduction from baseline
Baseline transparency	No methodology for BAU scenario outlined.	Reference to international methodological guidelines applied, however, no detailed description of methodology and used inventory data	Detailed description of methodology and inventory data used *(alternatively, direct reference to policy paper with such a BAU estimation)*
Baseline stringency	Multiplication of emissions by more than 3 between 2010s and 2030	Multiplication of emissions by 2-3 between 2010s and 2030	Multiplication of emissions by less than 2 between 2010s and 2030
Commitment of government	No description of responsibilities or institutional arrangement for operationalization and implementation of INDC	Reference to responsible ministry and/or governmental agency, however, no further elaboration on institutional arrangement to ensure implementation of INDC or clear indication that the INDC is aligned with national (climate) strategies, policies and priorities	Reference to responsible ministry and/or governmental agency and outline of institutional arrangement to ensure implementation of INDC and clear indication that the INDC is aligned with national (climate) strategies, policies and priorities.
Stakeholder consultation	No stakeholder consultation mentioned	Stakeholder consultations mentioned, however, no clear participatory process and no information on kind of stakeholder outlined	Inclusive and participatory stakeholder engagement during INDC preparation Engagement foreseen for implementation including specification of stakeholder types (public, private, NGO, international experts, etc.)
Governance	Ranked below 160th	Ranked between 100th and 160th	Ranked above 100th
PoA participation	2 and less PoAs	3-4 PoAs	Over 5 PoAs

8.1 Political risks regarding continued accrual of CERs

The rationale of the assessment of the risk that CERs do not continue to accrue due to host country government action is described in the figure below.

Figure 6: Factors affecting risk that CERs do not continue to accrue due to government action



The following categories of the assessment are factors that could aggravate or attenuate this political risk.

Ambition, baseline conservativeness and transparency

In order to evaluate the level of risk of a government withdrawing an approval letter due to an overly ambitious mitigation target, we have assessed countries' INDCs regarding their real level of ambition, which results from information on a) the level of conservativeness of the INDC's baseline as well as the actual overall mitigation target. Given that many INDCs are not transparent with regard to their baseline definition, we have also assessed their level of transparency in order to also allow for a better understanding of the uncertainties associated with the baseline definitions. In many instances the INDC baseline is defined in an earlier biannual update report or a national communication. Where this is the case, we have assessed the baseline definitions presented in these documents with the same objective of analysing stringency and uncertainty of the mitigation target in relation to the baseline in order to gauge how strongly a country could come under pressure to count emissions reductions from the corresponding activities toward its own NDC. If a country has overly ambitious policies or targets in place in a sector in which Ci-Dev is active, this could aggravate the risk of expropriation as the host country could seek to stop the operation of a PoA in order to incorporate the same activity and its emissions reductions in its policy. Given that this would represent an act of bad governance only conceivable in countries with a known record of disrupting business, this assessment category is only relevant in combination with a low score in the risk of doing business ranking (‘Ease of doing business report’ (World Bank 2016). see below).

INDC Quality and Reliability

In order to assess potential conflicts or overlaps between sectoral efforts that could lead to a significant difference between sectoral mitigation potentials and the national mitigation target defined in the INDC, potentially affecting both the environmental integrity and the risk of withdrawing the letter

of approval, we have qualified the robustness of the planning process leading up to the publication of the INDC. Our assessment of "robustness" is based on an assessment of: whether an adequate stakeholder consultation process had taken place, whether the country was rather a latecomer or early mover in presenting its INDC, the level of government that was involved in the process and the INDCs' consistency with previously existing climate policy instruments.

Overlap of policy scopes

The higher the number of policy instruments and the lower the degree of coordination between them, the higher the risk that the overall mitigation achieved by them is overestimated because both direct and indirect effects are counted twice (see Figure 4). We therefore look at the overall numbers of policy initiatives undertaken.

8.2 Project operation risk due to CDM obsolescence

Potential obsolescence of the CDM due to lacking host country engagement.

Previous experience and success with PoAs

Existence of a robust CDM and in particular a PoA pipeline is a strong indication of the current regulatory environment's attractiveness for mitigation action. Countries with a strong track record and positive experiences with market mechanisms overall are more likely to continue efforts to maintain that positive environment also when other climate policy efforts (climate finance for NAMA implementation or the SDM etc.) kick in.

Regulatory environment for project developers: Ease of doing business ranking

A stable regulatory environment for project development and operation in the host countries is an important determinant of the continued supply of CERs in Ci-Dev projects. To include this factor in our analysis we have included the country ranking of the World Bank's 'Ease of doing business report' (World Bank 2016). The ranking provides a snapshot of the current regulatory environment for business activities across all economic sectors, but does not represent an indication of a country's honouring of international agreements.

Governance capacity: Quality of INDC, NAMAs and LEDS

To better understand the level of efforts each host country is putting in advancing policies that could affect Ci-Dev activity types (energy access, renewables and improved domestic energy efficiency) we have evaluated the quality of INDCs, screened for the countries' NAMA development and concrete measures toward achievement of LEDS. The preparation of NAMAs in particular indicates the level of advancement of a country's mitigation policy toolset. Thus, the efforts into NAMA development are also a key factor in our determination to which category a country belongs to. Numerous countries have neither publicly put forward plans for NAMAs nor LEDS. High capacity can mean a great ability

and willingness to undertake credible mitigation action; this is thus ultimately a key indicator for reliability of host countries.

8.3 Approach to the analysis regarding environmental integrity risk

At the country level, potential environmental integrity risk is viewed to be influenced by the already mentioned overlaps of (potential) Ci-Dev activities with NAMAs under development, which could result in double claiming. In addition, the countries' level of interest in bilateral mechanisms, and the countries' interest in market mechanisms as described in the following are key factors.

Mitigation policy overlaps with Ci-Dev activities

Among those countries that have publicly presented NAMAs or LEDS, we have identified potential overlaps with Ci-Dev activities, which should be monitored for their impact on operating conditions of Ci-Dev projects. In areas, in which such overlaps most likely will be advancing CDM projects (such as sector-wide measures incentivizing renewables) the risk of regulatory barriers is attenuated, while the risk that activities become non-additional and the risk of perverse incentives is increased. In some instances such an overlap could indicate greater likelihood that the host country will seek to discontinue operation of a PoA in order to include the same activity in its policy.

Risk resulting from bilateral mechanisms: is the country currently a JCM host country?

Countries, which host bilateral mitigation actions, could – if they do not set up proper registries for the corresponding emissions reductions – create a potential for double claiming. Currently the only such mechanism is the Joint Crediting Mechanism (JCM) by initiative of the Japanese government. Several of the Ci-Dev eligible countries are also JCM host countries (Ethiopia, Bangladesh, Cambodia, Laos, and Myanmar), however no actual project activities have been set up in these countries. But – especially in countries with limited capacity to set up a registry and create transparency in accounting emissions reductions – developments with regard to the JCM should be monitored.

INDC and Market Mechanisms

In order to assess to which extent a country is at risk to inadequately prevent double counting of emissions from CDM projects and measures taken to achieve their INDC, we assess whether the INDC documents provide an indication of the countries willingness and ability to address double counting. Furthermore, a key question is whether a country indicates willingness to use market instruments for achieving its (I)NDC.

8.4 Results of the analysis

The complete results of the analysis following the approach outlined in Table 1 are found in the Annex including a traffic-light indication of the conclusions in regard to the key risks previously outlined in section 5.

In the following, we are now presenting some key highlights along the structure of presenting country examples in the three country categories according to countries' level of sophistication of climate policy instruments and related governance capacities: Country type C having presented an INDC with limited specificity and no significant supporting policy documents, country type B having prepared and published an INDC and having engaged in concrete mitigation activities such as development of NAMAs, and having a certain level of CDM activity, whereas country type A can boast a fully-fledged national greenhouse gas reduction strategy and has utilized many climate policy instruments in a mutually reinforcing manner to achieve real mitigation and sustainable development co-benefits.

8.4.1 Country type C: least advanced mitigation policy instruments

The countries with the least developed climate policy toolsets and the most limited capacity for governance on climate change mitigation among Ci-Dev eligible countries are: Benin, Burundi, Cameroon, Central African Republic, Chad, Comoros, Cote d'Ivoire, Democratic Republic of Congo (DRC), East Timor, Eritrea, Guinea, Guinea-Bissau, Laos, Liberia, Madagascar, Mauritania, Myanmar, Niger, Sao Tome & Principe, Sierra Leone, Somalia, South Sudan, and Yemen. Of those countries, particularly DRC, Cote d'Ivoire and Madagascar could gradually become more relevant due to a high mitigation potential linked to hydropower, biomass utilization and efficiency improvement in cities, but their governance challenges will likely prove limiting factors. Myanmar could also become an increasingly attractive host country as it is likely to improve its governance in the future due to the ongoing political transition.

The key country challenge in this group is the low level of governmental capacity for designing and implementing mitigation policies and consequentially the limited awareness with regard to technical issues such as double counting. In addition, there could potentially be a risk of a flawed understanding or limited public awareness to protect ownership of mitigation outcomes from CDM activities – in particular in countries with limited to zero CDM activities. Beyond, countries in this group could have the highest risks related to erratic government decisions even at internationally visible levels such as the scope of NAMAs (where existing) or INDCs.

Most countries in this category do neither have ambitious targets nor conservative baselines. Those that have not made their baselines transparent might be clarifying them through a later revision of the NDC. Sierra Leone appears to have both an ambitious target and a conservative baseline, and could thus be at risk of wanting to appropriate emissions reductions from CDM activities.

Given that many countries in this group are in somewhat unstable political circumstances, the CDM often not being a high political priority, and given the limited experience with CDM activities, the risk of regulatory changes negatively affecting CDM activities in the country is highest in this group.

Particular countries in this category could benefit from building capacities to access carbon markets in the future, if their political stability and general governance situation allows for this. The focus in these countries should be to strengthen basic capacities through engagement in cost-effective projects of smaller volumes without taking an overly great risk of investing into projects that could likely be discontinued due to reasons beyond the influence of the program. However, if other regulatory barriers are to be expected due to insufficient governance capacity, such capacity building efforts can also easily be lost. For ensuring high effectiveness in achieving mitigation action, Ci-Dev might focus its efforts among countries in this group to those which show the most tangible governmental support for CDM projects. Unfortunately none of the countries in this category have any relevant CDM experience in activities supported by Ci-Dev. Efforts in these countries should in particular take the risks from bottlenecks in dysfunctional regulatory processes into account (e.g. no LoA, no licences or permits for implementation). The risk of doing business ranking could provide some limited indication as to this type of operational risk, but actual knowledge of the situations in the respective institutions is necessary for a robust assessment of which countries could be best advanced.

8.4.2 Country type B: intermediate mitigation policy instruments

The middle category is the largest one; it includes: Afghanistan, Bangladesh, Bhutan, Burkina Faso, Cambodia, Cape Verde, Congo, Gambia, Ghana, Lesotho, Malawi, Mali, Mozambique, Nepal, Nigeria, Senegal, Sudan, Tanzania, Togo, Zambia and Zimbabwe. The countries in this category tend to have developed at least a relatively specific INDC and can demonstrate some level of activity regarding NAMA development in particular sectors. In addition, at least a few CDM projects are operational, indicating that the governmental capacity and the regulatory environment in general appears sufficient for continued operation of CDM projects. However, many of these countries have general difficulties with regard to good governance or limited government capacity to implement robust mitigation action. As observed in the INDC development process of some of the countries, data is insufficient and many have not defined quantitative targets.

In these countries, however, by far not all sectors are addressed by detailed NAMA feasibility studies or concrete policies[4]. The estimation of mitigation potential in these sectors thus does not have a strong foundation. Those countries in this category which have a conservative baseline and ambitious mitigation targets[5] could therefore be most at risk of appropriating CERs occurring from

[4] For the assessment of the NAMA pipeline refer to the Annex.

[5] This includes Cape Verde, Gambia and Zambia

CDM activities in the country if they overestimated their real mitigation potential or ability to induce the corresponding emissions cuts.

Nigeria has a large mitigation potential and a highly ambitious target on off-grid solar electrification: its unconditional scenario includes providing 13 GW of renewable electricity to rural communities currently off-grid – an effort which is in line with one PoA in Ci-Dev's support pipeline (see Annex). At the same time the country also is known for its severe governance challenges. While such a country should not be the place for experimentation, it could reliably host Ci-Dev activities as the track record of PoAs in the area of household energy shows. In such a case developments on NAMAs and INDC implementation should be watched, as they could represent both an opportunity for project developers as well as a risk for ongoing activities.

With its NAMA concept on biomass energy, Burkina Faso has reached the in-depth appraisal phase of the NAMA Facility. However the development of the NAMA concept has stalled due to lack of clarity on the institutional responsibilities. If the NAMA eventually goes forward, it could represent both an opportunity to advance energy-related activities in Burkina Faso, but due to its broad energy-sector scope could also affect the PoA for dissemination of bio digester systems included in the Ci-Dev pipeline. Given that at this preliminary stage of NAMA development no specific policy instruments have been defined, its consequences are unclear. The NAMA could arguably improve the business environment e.g. facilitating access to financing and thus strengthen competition in the market, but given the slow pace of the NAMA development it is unlikely that severe changes will occur in the near future.

Cambodia has a robust record of CDM activities, however the general governance situation is challenging. Cambodia is also one of the active JCM host countries. While the PoA activities could lend themselves for Ci-Dev involvement and while there is no current threat, activities in Cambodia should be watched for future NAMA developments and JCM activities that could undermine credibility of CERs or reliable continuation of PoAs.

Gambia has no real experience in the CDM, a high ambition and stringent baseline in its INDC and is willing to use market mechanisms to achieve its target. It has an explicit objective of increasing rural electrification through renewable energy in its set of NAMAs. If Ci-Dev were to become active in Gambia e.g. by exploring synergistic NAMA development based on a PoA) it would need to make sure that Gambia will not view CDM activities as both a source for domestic mitigation as well as revenue from sales of CERs.

Ghana, Lesotho, Mozambique, Nepal, Malawi, Nigeria, and Senegal have some experience in Ci-Dev relevant PoA activities, limited ambition in their INDCs and no overlap with NAMAs. These are countries which could be further considered for PoA activities, and in which no specific policy changes are to be expected resulting from INDCs and NAMAs. For assessing their potential, the specific focus should be on the particular business environment for developing energy related activities and the climate policy track record. Bhutan, Senegal, Ghana and Zambia stand out for their good governance and in particular Senegal has a robust and long-standing climate policy

engagement, so our recommendation is to further screen for potential activities in these latter countries.

The key challenges in the group of countries in category B are due to the greater number of NAMAs and related policies that concern mitigation activities, which can cause interferences and inconsistencies between sectors or toward the INDC due to potential flaws in the design process.

8.4.3 Country type A: advanced mitigation policy instruments

The countries with the most advanced climate policy toolset include Ethiopia, Kenya, Rwanda and Uganda.

The key challenge in this country group could be the countries' ability to attract potentially large sums of climate finance, which could draw some attention away from CDM activities in particular if the general level of support for market instruments is weak. In addition, countries in this group could be experimenting with new forms of developing NAMAs (e.g. hybrid PoA-NAMA), which would require addressing a number of accounting issues. The same experimentation could however also attenuate the risk of neglecting CDM projects, in particular if such a NAMA draws part of its revenues from CER sales. Overall, the risks from appropriation or regulatory barriers seems most limited in this group, due to an advanced governance capacity and transparency, as well as proactive international engagement in the UNFCCC, which causes greater exposure to international scrutiny.

Ethiopia developed a far-reaching Climate-Resilient Green Economy (CRGE) strategy in 2011. It has a very ambitious policy to keep its energy system on a low-carbon path. A dedicated CRGE Facility tries to coordinate climate finance mobilization, NAMAs and carbon market mechanism engagement. However, Ethiopia's attempts to mobilize GCF funding have so far been unsuccessful, although the Ministry of Finance has received both GCF and Adaptation Fund accreditation in March 2016. A GCF proposal has been prepared by the Ministry of Energy that covers off-grid energy access technologies that are relevant for Ci-Dev activities. Potential linkages between the draft GCF proposal and Ci-Dev PoAs could be explored by Ci-Dev in order to set a precedent for linking carbon markets and climate finance, as per the most recent CMP annual guidance to the CDM EB.

Uganda has been a pioneer in applying the concept of a renewable energy feed in tariff in a poor developing country context. Moreover, it has used the CDM from its earliest days, often in close collaboration with the World Bank. The Ci-Dev has two Uganda based activities in the pipeline and we recommend to build further on these activities.

Rwanda has a coordinated approach to NAMA development and climate finance mobilization through skilled government agencies. It is the first country that has been able to access the GCF's Project Preparation Facility. While the country will only communicate a quantitative mitigation target in 2017, this is appropriate and indicates a willingness to present robust numbers on the basis of sufficient information. It has strong sectoral targets and in particular foresees measures to roll-out solar mini-grids, enhance energy efficiency. Having participated in exploring innovative combinations of PoA

and NAMA for improved cook stoves and water filters (Michaelowa et al. 2013), Rwanda could be an ideal country to pilot such scaled-up actions that draw on both instruments in a complementary manner. The key question is how emissions reductions will be counted toward the various stakeholders involved in such public-private partnership activities in order to prevent double counting, while creating the right incentives to engage on costly activities such as distribution, capacity building and MRV at household level. Given that the indicated climate finance needs are relatively large and given that the INDC indicates the countries willingness to use market instruments, such a hybrid programmatic-NAMA design needs to be done in a clear understanding that the government of Rwanda will not be able to receive both international support and full ownership over the mitigation units.

8.5 Summary of country-level challenges and opportunities

Countries which demonstrate clear challenges in particular categories such as good governance or past experience in CDM activities may quite clearly not be the best targets for effective mitigation action under Ci-Dev but could benefit from targeted capacity support. Other risk categories need to be addressed on a country-by-country basis to judge the potential effectiveness of interventions to leverage mitigation action. Nevertheless, some tendencies regarding the categories of countries in which particular opportunities or risks are more or less pronounced can be identified:

If mitigation effectiveness is the overriding objective, countries in category C may only be addressed through a targeted approach focussing on those countries with the most experience in CDM projects, and where an improvement of governance is likely in conjunction with the existence of a significant mitigation potential. At the same time, interventions by the World Bank Group have the unique potential to address some of these country-specific challenges and to enable them to access international carbon markets and climate finance in the long run: Here, fundamental aspects are most important, namely the functioning of the CDM process and regulation as indicated by previous experience in the CDM. Secondly, the evolving country risk levels resulting from conflict or corruption as generally visible in international news media should be seen as an overriding factor. Thirdly, in view of limited governance capacity, overlaps of potential activities with mitigation policies should be assessed carefully, given that these can provide for both an improvement of the business situation, as well as a risk of creating perverse incentives.

In countries featuring in category B, the approach could be a bit more opportunity-oriented: By focussing on countries with high interest in activities bringing together mitigation and development as expressed through their NAMA pipelines or sectoral targets high government commitment can be harnessed to mobilize action also if CDM experience to date has been limited. Nevertheless, from the beginning, the conversation surrounding CDM activities should manage expectations with regard to counting emissions reductions toward the NDC, and work to address this in contractual arrangements. This would reduce the risk of future withdrawal of approval letters by the host country after 2020 in order to meet its NDC. This country category could benefit significantly from capacity

building on CDM MRV. Hereby, technical capacity under the emerging SDM could emerge as a co-benefit.

Countries in category A offer the highest level of opportunities for experimentation with innovative approaches to scaling up of mitigation action toward NAMAs and INDCs and for piloting activities toward the SDM, such as through hybrid design of NAMAs building on PoAs. Feasibility studies and pilot activities could be combined with capacity building toward crediting of policy actions. Given their level of coordination and previous efforts, we recommend to focus such experimental action on Ethiopia, Rwanda and Uganda, LDCs with a critical mass of experience and political will on which to build. Pilot activities could become extremely relevant as best-practice examples for policy action under the SDM and show that even LDCs are ready for scaled up SDM action. Countries participating in such pilot activities could greatly benefit from the resulting capacity building effect, while good pilots improve the reputation of emerging carbon markets benefiting all potential host countries.

9 Conclusions and recommendations

Uncertainties regarding CER accrual to Ci-Dev before 2020 are much lower than for the post-2020 period. Except the unlikely sudden emergence of a large new buyer of CERs or VERs at high prices, risks are rather limited. At the same time, CDM reform and negotiations over SDM modalities and procedures will continue and influence each other. If the SDM is seen as natural continuation of the CDM, CDM project owners will expect a natural transition of their activities into the SDM. Given the strong support for the Paris Agreement (175 Parties having signed the Agreement on 22nd April 2016), there is a realistic possibility that the PA may actually enter into force earlier than expected. This may imply a more immediate clarification of the relationship between the CDM and Art. 6 mechanisms.

During the pre-2020 period demand for CERs and other units that can be expected from NDCs will become clearer, including for using CDM as a building block for RBF mechanisms (similar to the Ci-Dev approach), e.g. through the GCF. This relates both to the newly emerging domestic need for emissions reductions in developing countries as well as the developed countries' willingness to fulfil or top up their NDCs with international units.

Post-2020, risks for Ci-Dev activities increase substantially. If the SDM is not seen as seamless continuation of the CDM, CDM projects would need to be used to generate ITMOs under Article 6.2 or the generation of CERs would stop in 2020. Issuance for pre-2020 CERs can stretch up to 2023 or the end of the Kyoto Protocol true-up period for the second commitment period. As NDC implementation periods start in 2020, governments will have a higher interest to scrutinize which share of the mitigation is sold abroad in form of credits and which share is retained domestically.

However, this will only become politically salient in 2023 when the first stocktake of NDC progress is undertaken, but particularly when the end date of the first NDC approaches, which generally is 2030.

Our recommendations can be differentiated into those for the short term (up to 2020) and long-term.

As an immediate step, Emissions Reductions Purchase Agreements (ERPAs) negotiated under Ci-Dev have already anticipated various developments regarding the transition toward the SDM by including a relatively open description of what emissions reductions could be used for compliance with the ERPA post 2020. The wording "standard comparable to the CDM agreed upon by the Parties" might have to be refined further in order to prevent that counterparts argue that the post-2020 mechanisms are "not comparable" and thus can retain credits.

In the short term, the ambivalent situation regarding support for market instruments and the difficult market situation of the CDM putting those activities that do not benefit from similar support at risk of being discontinued dominates. We thus recommend Ci-Dev to take an even more active role in promoting the important benefits of market instruments as key implementation mechanisms for the Paris Agreement. This should be done by highlighting the quality of projects supported by Ci-Dev and encouraging other donors to maintain or increase support for ongoing activities in order to boost trust in market instruments. As political negotiations on the SDM advance in the next 2-4 years, Ci-Dev can support project owners by providing essential information and capacity building to maximise the chances for transferring activities into the SDM in the post-2020 market. Furthermore related capacity building from Ci-Dev could also benefit Ci-Dev host countries and enhance their capacities in taking a proactive role in the UNFCCC negotiations.

As a lighthouse initiative, Ci-Dev can demonstrate that the CDM structure works and should serve as a blueprint for developing the SDM and a benchmark for cooperative approaches as well as showcase that links to climate finance could contribute to scaling up and replicating market based activities. In order to do this, we recommend Ci-Dev monitor decisions on NDCs with regards to carbon markets, in particular the SDM regarding possibilities for transferring activities from the CDM to the SDM so that projects can be assured a continued carbon revenue and Ci-Dev can continue acquiring similar shares of units from each PoA beyond 2020.

In those countries that foresee use of a bilateral mechanism such as the JCM, Ci-Dev should be monitoring for any overlap in actual implementation of activities in order to ensure that registries to account for emissions reductions to address the issue of double claiming, apply best practice and effectively prevent that CDM emissions reductions directly benefit from such a bilateral mechanism. At the same time, the CDM provides clear regulation that effectively prevents activities generating CERs to be counted toward other mitigation obligations – bilateral mechanisms therefore in the authors' view do not represent a risk to the public perception of the integrity of Ci-Dev activities.

In the medium to long term, we recommend supporting pilot activities regarding the advancement of scaled-up action e.g. through embedding of PoA-style activities in NAMAs or through exploring the possibility for crediting policy actions. Ci-Dev could enhance its visibility as an innovative program

piloting new and important concepts of mitigation policy. Such innovative approaches could in particular be pursued in countries of category A and in particular Rwanda's previous experimenting with combining PoA and NAMA lends itself as a highly interesting starting point for a PoA-based NAMA approach, whereas Ethiopia's Climate-Resilient Green Economy strategy and high level of coordination lends itself to explore possible top-down policy crediting concepts. There are different models of such integration that can be explored, namely using the PoA "infrastructure" merely to guide activities developed as a NAMA or to buy CERs from PoAs to demonstrate verified mitigation results under a NAMA or to have both components side-by-side.

In Ci-Dev eligible countries it is still early days to anticipate how NAMAs will evolve and specifically affect the business environment of ongoing CDM activities. Both in the short and the long term, a monitoring of those cases in which we have identified an overlap with the scope of the Ci-Dev program could allow identifying challenges to project operation or possible occurrence of perverse incentives. Within each host country, Ci-Dev could help project owners understand evolving regulatory implications of NAMAs as they are being developed over time.

Given the emerging topic of blending climate finance sources we see the need for research to explore the impacts of competing pricing for emissions reductions from different climate finance sources. Specifically the question needs to be answered whether economic efficiency can be achieved while development benefits are delivered effectively, or whether trade-offs between these two objectives cannot be avoided. Furthermore, we recommend exploring the types of incentives that project participants are facing, by modeling complementarities amongst various types of finance for an actual Ci-Dev project and the different possible approaches for the blending of finance under varying price assumptions.

In view of the importance of credible mitigation commitments and the debatable quality of some INDC's baselines, there is an opportunity for Ci-Dev to highlight its experience supporting methodological work on baselines. Ci-Dev could be assisting key countries in revising the baselines of NDCs and NAMAs, building on the program's experience in standardized baselines. Energy access methodologies as preferred by Ci-Dev are among the most highly standardized in the CDM toolkit, and are therefore the ideal pilot sector for sectoral crediting approaches that could become more relevant once the PA becomes effective. Furthermore, Ci-Dev could be providing important capacity building support at the intersection of carbon market activities and policies to ensure robust MRV and accounting system design and contribute to innovative approaches thus also harnessing possible synergies with other initiatives of the World Bank such as the Transformative Carbon Asset Facility.

In selecting future activities for Ci-Dev to support, we recommend Ci-Dev projects to be selected and developed strategically by ensuring best compatibility with the most robust and credible greenhouse gas mitigation instrument that emerges in the climate policy landscape over the coming years. This will in all likelihood be the SDM. Furthermore Ci-Dev can contribute to making the SDM a credible mechanism by highlighting best-practice examples under the CDM and undertaking pilot activities for crediting of policies based on the methodological toolset of the CDM. At the same time, we

recommend supporting a selected group of countries standing out for their proactive engagement in negotiations to achieve their interest in a reliable market mechanism by maintaining an open information exchange on key issues regarding Art. 6.

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Annex: Country analysis table

See separate excel file